

CLAIMS

1. A printed circuit board product comprising:
a dielectric structure core having a first surface; and
5 at least two conducting pads on the first surface of the dielectric structure
core, wherein the at least two conducting pads are separated by a
pad edge-to-pad edge separation distance of less than 12 mils.
2. The printed circuit board product of claim 1 wherein the pad edge-to-pad
10 edge separation distance of the at least two conducting pads is 3 mils. to
10 mils.
3. The printed circuit board product of claim 2 wherein the pad edge-to-pad
edge separation distance of the at least two conducting pads is 8 mils.
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4. The printed circuit board product of claim 1 and further including:
a substantially zero signal degradation electrical connection between the
at least two conducting pads.
- 20 5. The printed circuit board product of claim 4 wherein the substantially
zero signal degradation electrical connection is solder.
6. The printed circuit board product of claim 5 wherein the at least two
conducting pads includes:
25 a first conducting pad having an edge; and
a second conducting pad having an edge separated from and adjacent to
the edge of the first conducting pad, the edges of the first and
second conducting pads defining therebetween a surface area of
the first surface, wherein the solder only partially covers the
30 surface area.
7. The printed circuit board product of claim 6 wherein the solder covers
substantially all of the surface area.

8. A printed circuit board product comprising:
a dielectric structure core having a first surface;
at least two conducting pads on the first surface of the dielectric structure
5 core; and
a solder bridge electrical connection between the at least two conducting
pads.
9. The printed circuit board product of claim 8 wherein the at least two
10 conducting pads includes:
a first conducting pad having an edge; and
a second conducting pad having an edge separated from and adjacent to
the edge of the first conducting pad, the edges of the first and
second conducting pads defining a surface area of the first surface
15 therebetween, wherein the solder bridge electrical connection
only partially covers the surface area.
10. The printed circuit board product of claim 9 wherein the solder bridge
electrical connection covers substantially all of the surface area.
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11. The printed circuit board product of claim 8 wherein the solder bridge
electrical connection is a substantially zero signal degradation electrical
connection.
- 25 12. The printed circuit board product of claim 8 wherein the solder bridge
electrical connection is formed from solder paste.
13. The printed circuit board product of claim 12 wherein the solder paste is
applied to the first surface of the dielectric structure core through a stencil.
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14. A method of fabricating a substantially zero signal degradation electrical connection on a printed circuit board, the method comprising the steps of:
- providing a printed circuit board defined by a dielectric structure core
having a first surface, the first surface including a first conducting
pad having an edge and a second conducting pad having an edge
separated from and adjacent to the edge of the first conducting
pad, the edges of the first and second conducting pads defining
therebetween a surface area of the first surface;
- applying a solder paste on the first and second conducting pads and on
the first surface of the dielectric structure core, the solder paste at
least partially covering the surface area of the first surface
between the edges of the first and second conducting pads to form
a substantially zero signal degradation electrical connection
between the first and second conducting pads.
15. The method of claim 14, and further including the step of:
performing reflow soldering of the solder paste applied to the first and
second conducting pads and the surface area of the first surface of
the dielectric structure core.
16. The method of claim 14 wherein the step of applying the solder paste
includes the steps of:
- placing a stencil on the first surface of the dielectric structure core, the
stencil defining a first opening sized to substantially correspond
to the first conducting pad, a second opening sized to
substantially correspond to the second conducting pad and a third
opening that links the first opening to the second opening and is
sized to correspond to a partial portion of the surface area of the
first surface between the edges of the first and second conducting
pads; and
- applying the solder paste onto the stencil so that the solder paste flows
through the first, second and third openings and onto the first and

second conducting pads and the first surface of the dielectric structure core.

17. The method of claim 16, and further including the steps of:
5 removing the stencil from the first surface of the dielectric structure core;
and
performing reflow soldering of the solder paste applied to the first and
second conducting pads and the surface area of the first surface of
the dielectric structure core.

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18. The method of claim 14 wherein the step of applying the solder paste includes:

15 applying the solder paste on the first surface of the dielectric structure core such that the solder paste covers substantially all of the surface area of the first surface between the edges of the first and second conducting pads to form a substantially zero signal degradation electrical connection between the first and second conducting pads.

- 20 19. The method of claim 18 wherein the step of applying the solder paste includes the steps of:

25 placing a stencil on the first surface of the dielectric structure core, the stencil defining an opening sized to substantially correspond to the first conducting pad, the second conducting pad and substantially the entire surface area of the first surface between the edges of the first and second conducting pads; and
applying the solder paste onto the stencil so that the solder paste flows through the opening and onto the first and second conducting pads and the first surface of the dielectric structure core.

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20. The method of claim 19, and further including the steps of:
removing the stencil from the first surface of the dielectric structure core;
and
performing reflow soldering of the solder paste applied to the first and
5 second conducting pads and the surface area of the first surface of
the dielectric structure core.
21. The method of claim 19 wherein the stencil includes a plurality of
openings in addition to the opening, and wherein prior to the step of placing the
10 stencil on the first surface of the dielectric core the method includes the step of:
masking off at least one opening of the plurality of openings such that the
solder paste is prevented from flowing through the at least one
opening.
- 15 22. The method of claim 14 wherein the edge of the second conducting pad
is separated from the edge of the first conducting pad by a pad edge-to-pad edge
separation distance of less than 12 mils.
- 20 23. The method of claim 22 wherein the pad edge-to-pad edge separation
distance is 8 mils.
24. A stencil device for insuring that solder paste is accurately applied to a
printed circuit board to create a substantially zero signal degradation solder
bridge electrical connection, the printed circuit board being defined by a
25 dielectric structure core having a first surface, the first surface including a first
conducting pad having an edge and a second conducting pad having an edge
separated from and adjacent to the edge of the first conducting pad, the edges of
the first and second conducting pads defining therebetween a surface area of the
first surface, the stencil device comprising:
30 a stencil plate member defining a first opening sized to substantially
correspond to the first conducting pad, a second opening sized to
substantially correspond to the second conducting pad and a third
opening that links the first opening to the second opening and is

5 sized to correspond to a partial portion of the surface area of the first surface between the edges of the first and second conducting pads, such that upon application of solder paste to the stencil plate member, the solder paste flows through the first, second and third openings onto the first and second conducting pads and the first surface of the dielectric structure core to form a substantially zero signal degradation electrical connection between the first and second conducting pads.

10 25. A stencil device for insuring that solder paste is accurately applied to a printed circuit board to create a substantially zero signal degradation solder bridge electrical connection, the printed circuit board being defined by a dielectric structure core having a first surface, the first surface including a first conducting pad having an edge and a second conducting pad having an edge
15 separated from and adjacent to the edge of the first conducting pad, the edges of the first and second conducting pads defining therebetween a surface area of the first surface, the stencil device comprising:

a stencil plate member defining an opening sized to substantially
20 correspond to the first conducting pad, the second conducting pad and substantially the entire surface area of the first surface between the edges of the first and second conducting pads, such that upon application of solder paste to the stencil plate member, the solder paste flows through the opening onto the first and second conducting pads and the first surface of the dielectric
25 structure core to form a substantially zero signal degradation electrical connection between the first and second conducting pads.

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